DOCUMENT RESUME

ED 394 476 HE 029 172

TITLE	Higher Education: Assessment and Accountability.
INSTITUTION	Oregon State System of Higher Education, Eugene.
PUB DATE	21 Apr 95
NOTE	28p.; Prepared for the Oregon State Board of Higher Education.
AVAILABLE FROM	Oregon State System of Higher Education, Office of Academic Affairs, P.O. Box 3175, Eugene, OR 97403.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*College Outcomes Assessment; *Educational Assessment; *Educational Quality; Evaluation Methods; Higher Education; Models; *State Colleges; State Programs; State Universities; Student Evaluation
IDENTIFIERS	Eastern Oregon State College; *Oregon; Oregon State University; Portland State University OR; Southern Oregon State College; University of Oregon; Western Oregon State College

ABSTRACT

This report describes the model used by the Oregon State System for Higher Education to assess the impact of higher education on the growth and change in students as a result of participation in higher education. The model prescribes assessments of general knowledge and abilities, learning environment, major field knowledge, degree completion, professional licensure, employment, and customer satisfaction (both alumni and students). Specific assessments used by individual colleges and universities in the Oregon State system are described including Southern Oregon State College, Oregon State University, Portland State University, University of Oregon, Eastern Oregon State College, and Western Oregon State College. The implications of these assessments for improving the education system are considered. (JPB)

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HIGHER EDUCATION:

ASSESSMENT AND ACCOUNTABILITY

ED 394 476

Prepared for the
Oregon State Board of Higher Education

Oregon State System of Higher Education
Office of Academic Affairs
P.O. Box 3175
Eugene, OR 97403

April 21, 1995

HE029172

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Staff Report to the Board

Staff reported at the October 1994 Board meeting on efforts by the Chancellor's Office and campuses to implement the Oregon Assessment Model adopted by the Academic Council in fall 1993. This framework stipulates that, in addition to traditional assessments on a course-by-course basis, OSSHE undergraduates will be assessed to provide evidence about student performance at three critical transitions: admissions, midpoint, and graduation. This model allows OSSHE campuses to develop assessment activities appropriate to their institutional missions within the context of the model to provide quality assurance. OSSHE's assessment initiative is designed to serve dual functions: (1) improve the lives of students, including their retention, learning, and success; and (2) demonstrate accountability to students and their parents, elected officials, other agencies, and employers.

Despite recent and fast growth in state-mandated assessment of college students and graduates, OSSHE took a different approach largely because of the abysmal failure in other states of assessment approaches that used single externally mandated instruments. The OSSHE approach is consistent with the observations of Donald M. Stewart, president of The College Board in New York, that for assessments to be useful for improving higher education, they should be campus-based, faculty-developed, and mission-related (*Trusteeship*, March/April 1995). These qualities do not appear to describe the simple solution that some states demand. But they do describe the State System's approach to assessment. OSSHE's assessment activities are related to efforts to raise productivity in higher education -- serving more students, improving student performance, and providing a more valued mix of services relative to costs.

In the fall of 1994, incentive funds were given to each campus to support the implementation of the Oregon Assessment Model. Each campus developed a proposal to begin assessments related to the three checkpoints in the model not covered by their ongoing assessment efforts. The Chancellor's Office targeted $200,000 for special projects in undergraduate student assessment. Most of these projects were completed in February 1995 and were used to develop an accountability report for the 1995 Legislative Session. Staff promised to share with the Board information about the outcomes of these projects at a later date.

Although the undergraduate curriculum is designed to have accumulative effects on general education and major field learning, the focus of traditional assessment is on what students learn (theories, concepts, and skills) on a course-by-course basis. The faculty member evaluates the work of the student and assigns a grade based on the professor's judgment about the quality of the work. This assessment results in a transcript of courses taken, their credit value, and earned grades. Upon completion of the published program requirements and standards, a degree is conferred. As evidence of productivity, colleges and universities report the number of degrees earned by students each academic year. OSSHE conferred 13,457 degrees in 1993-94.

By its nature, this traditional approach to assessment takes a narrow view of how students change and grow in college. However, the results of participation in higher education are many and include changes in a number of dimensions including: general knowledge, major field knowledge, social functioning skills, professional/occupational skills, personal goals and aspirations, general attitudes, attitudes toward self and others, and relationships with employers, family, community, and society (Ewell, 1984).

The assessment demonstration projects undertaken by OSSHE campuses embrace this broader perspective of higher education outcomes and rely on a variety of assessment approaches to capture the full range of student abilities. Campuses gathered evidence about the effects of higher education on student performance in a number of dimensions.

General Knowledge and Abilities. More than half of the campuses used performance-based examinations (some used commercially available standardized tests and others used faculty-developed tests) to measure critical thinking, communication, and problem-solving skills of undergraduates. These data will be used as a baseline to determine the value added to abilities given entering student characteristics.

Learning Environment. Several campuses are monitoring instructional practices that are associated with increased student learning effects. Currently enrolled students find their classes supportive and engaging. Self-reported gains in skills are high.

Major Field Knowledge. A number of approaches -- standardized objective tests, portfolios, senior capstone experiences -- are being used to assess major field knowledge, including the application of learning in real-world settings, by all OSSHE campuses.

Degree Completion. About half of students who entered as a first-time freshman (in Fall 1987) at an OSSHE institution earned a bachelor's degree at the institution they entered or another OSSHE institution within seven years or less. Other students left to complete two- or four-year degrees elsewhere.

Professional Licensure in Selected Programs. OSSHE students who take professional licensure examinations tend to have pass rates substantially higher than national averages.

Employment. More than 2,500 baccalaureate graduates were surveyed. At the end of the first year, 95 percent of OSSHE baccalaureate recipients were employed or continued their education, primarily in a graduate program. Of those employed, 80 percent found jobs in Oregon.

Customer Satisfaction. More than 4,500 students, recent graduates, and alumni of OSSHE colleges and universities were surveyed this year. They reported high levels of satisfaction with the contribution the collegiate experience made to their preparation for life. Surveys of employer satisfaction will be completed by the end of the year.

The focus of assessment is on strengthening undergraduate education. These assessment activities are having an impact on OSSHE campuses. OSSHE colleges and universities are rethinking traditional ways of structuring collegiate learning environments and finding ways of actively involving students in their education to enhance student retention and learning. Using the experience gleaned from the assessment demonstration projects, the Academic Council is now considering the next steps for campus- and state-level assessment. OSSHE submitted a proposal to the Fund for the Improvement of Postsecondary Education to extend the development of the Oregon Assessment Model. If funds are received, this project would develop a viable statewide assessment system for postsecondary education that is sample-based, involves faculty at two- and four-year public institutions in Oregon in its development, allows parallel assessments at the System and campus levels, permits campus choice, and involves Oregon employers in discussions about knowledge and abilities college graduates need to be successful in the workplace.

In sum, strategies for improving higher education productivity require mechanisms for gathering information from a variety of sources and on an ongoing basis. OSSHE's assessment and programmatic efforts are critical to developing a supportive learning environment in which students persist, make changes, grow intellectually, earn degrees, and bring their talents into Oregon's workforce. Assessment plays an essential role in determining the success of our efforts and demonstrating accountability to our customers and investors.

SUMMARY

HIGHER EDUCATION: ASSESSMENT AND ACCOUNTABILITY

Dimensions of student growth and change

The results of participation in higher education are many and include changes in a number of dimensions including:

- General knowledge
- Knowledge of special fields
- Social functioning skills
- Professional/occupational skills
- Personal goals and aspirations
- General attitudes
- Attitudes toward self and others
- Relationships with employers, family, community, and society *(Ewell, 1984).*

Traditional assessment of undergraduates

For each course a student takes, the faculty member evaluates the work of the student and assigns a grade based on the professor's judgment about the work's quality. This assessment results in a transcript of courses taken, their credit value, and earned grades. Upon completion of the published program requirements and standards, a degree is conferred. As evidence of productivity, colleges and universities report the number of degrees earned by students each academic year. OSSHE conferred 13,457 degrees in 1993-94.

Are there any shortcomings to this traditional approach?

Although the undergraduate curriculum is designed to have accumulative effects on general education and major field learnings, the focus of traditional assessment is on what students learn (theories, concepts, and skills) on a course-by-course basis.

OSSHE's approach to quality assurance

In Fall 1993 OSSHE adopted the Oregon Assessment Model. This framework stipulates that, in addition to course assessments, OSSHE undergraduates will be assessed to provide evidence about student performance at three critical transitions: admissions, midpoint, and graduation.

A goal of the assessment model is quality assurance. Those who participate and invest in higher education should expect high quality.

What purposes are served by the Oregon Assessment Model?

OSSHE's assessment initiative is designed to:

- Improve the lives of students, including their retention, learning, and success; and
- Demonstrate accountability to students and their parents, elected officials, other agencies, and employers.

How is the Oregon Assessment Model consistent with OSSHE's efforts to be more effective and efficient?

OSSHE's assessment activities are related to efforts to raise productivity in higher education -- serving more students, improving student performance, and providing a more valued mix of services relative to costs.

Strategies for improving higher education productivity require mechanisms for gathering information from a variety of sources and on an ongoing basis.

Assessment is critical to improving the quality of instruction, programs, advising, and student learning. The focus of assessment is on strengthening undergraduate education.

How well are OSSHE students doing?

In the fall of 1994, incentive funds were given to each campus to support the implementation of an assessment model. Campuses gathered evidence about the effects of higher education on student performance in a number of dimensions.

General Knowledge and Abilities. More than half of the campuses used performance-based examinations (some used commercially-available standardized tests and others used faculty-developed tests) to measure critical thinking, communication, and problem-solving skills of undergraduates. These data will be used as a baseline to determine the value added to abilities given entering student characteristics.

Learning Environment. Several campuses are monitoring instructional practices that are associated with increased student learning effects. Currently enrolled students find their classes supportive and engaging. Self-reported gains in skills are high.

Major Field Knowledge. A number of approaches -- standardized objective tests, portfolios, senior capstone experiences -- are being used to assess major field knowledge, including the application of learning in real-world settings, by all OSSHE campuses.

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Customer Satisfaction. More than 4,500 students, recent graduates, and alumni of OSSHE colleges and universities were surveyed this year. They reported high levels of satisfaction with the contribution the collegiate experience made to their preparation for life. Surveys of employer satisfaction will be completed by the end of the year.

What impact is assessment having on OSSHE campuses?

OSSHE colleges and universities are rethinking traditional ways of structuring collegiate learning environments and finding ways of actively involving students in their education to enhance student retention and learning. OSSHE's assessment and programmatic efforts are critical to developing a supportive learning environment in which students persist, make changes, grow intellectually, earn degrees, and bring their talents into Oregon's workforce. Assessment plays an essential role in determining the success of our efforts and demonstrating accountability to our customers and investors.

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ASSESSMENT AND ACCOUNTABILITY:
INTRODUCTION

How are students affected by the four-year college or university experience?

The results of participation in higher education are many and include changes in a number of dimensions including:

- General knowledge
- Knowledge of special fields
- Social functioning skills
- Professional/occupational skills
- Personal goals and aspirations
- General attitudes
- Attitudes toward self and others
- Relationships with employers, family, community, and society *(Ewell, 1984)*.

What is the traditional way to assess undergraduate student learning?

During a graduating senior's typical years of collegiate study, he or she

- Has spent 1,800 or more hours in the classroom,
- Has written 75-100 essays,
- Has taken 250 exams, and
- Has completed numerous reports.

For each course, the faculty member evaluates the work of the student and assigns a grade based on the professor's judgment about the work's quality. This assessment results in a transcript of courses taken, their credit value, and earned grades. Upon completion of the published program requirements and standards, a degree is conferred. Consistent with this approach, colleges and universities report the number of degrees earned by students each academic year as evidence of productivity.

Are there any shortcomings to this traditional approach?

Although the undergraduate curriculum is designed to have accumulative effects on general education and major field learnings, the focus of traditional assessment is on what students learn (theories, concepts, and skills) on a course-by-course basis. Like a photographer, newer assessment approaches use different lenses (or perspectives) to capture the abilities of students.

How is OSSHE approaching quality assurance?

In Fall 1993 OSSHE adopted the Oregon Assessment Model. This framework stipulates that in addition to assessments associated with coursework, OSSHE undergraduates will be assessed at three critical transitions to provide evidence about student performance: admissions, midpoint, and graduation.

This framework supports attention to inputs (e.g., characteristics of incoming students such as high school GPA or proficiency level) and outputs (e.g., desired attributes of graduates, including technical competence in a field, high-level intellectual abilities, employment).

A goal of the assessment model is quality assurance. Those who participate and invest in higher education should expect high quality. The development of this quality assurance system involves assessing quality as well as communicating assessment results.

What is evidence of quality in higher education?

The major types of evidence include:

- The results of direct assessments of student abilities on graduation and the value added to abilities given entering student characteristics;
- Performance in further education and on relevant licensure and certification examinations;
- The successful and timely completion by students of their educational programs;
- The placement and performance of graduates in the workplace and their effective involvement in civic and community life; and
- Reported satisfaction of students with the contribution made by higher education toward the attainment of their goals *(Education Commission of the States, 1994).*

What are some specific ways campuses are pursuing assessment?

OSSHE campuses were encouraged to apply existing methods when available, as well as develop their own approaches when appropriate, to gather information about the set dimensions of student performance.

In the fall of 1994, incentive funds were given to each campus to support the implementation of the assessment framework. Each campus identified activities consistent with the intention of the System's approach to undergraduate assessment.

Campuses used the Oregon Assessment Model as a basis to examine current assessment activities and to determine their area of greatest need.

- Most campuses already evaluate the mathematics and writing abilities of entry-level freshmen for appropriate course placement.
- The State System has been developing proficiency-based college admissions standards.
- Because of these quality-control efforts now underway, campuses looked to assessing the effects of college programs on students at the mid and graduation checkpoints.

What purposes are served by the Oregon Assessment Model?

OSSHE's assessment initiative is designed to serve dual functions of:

- Improving the lives of students, including their retention, learning, and success; and
- Demonstrating accountability to students and their parents, elected officials, other agencies, and employers.

How is the Oregon Assessment Model consistent with OSSHE's efforts to be more effective and efficient?

OSSHE's assessment activities are related to efforts to raise productivity in higher education – serving more students, improving instructional outcomes, and providing a more valued mix of services relative to costs.

Strategies for improving higher education productivity require mechanisms for gathering information from a variety of sources and on an ongoing basis.

Assessment is critical to improving the quality of instruction, programs, advising, and student learning. The focus of assessment is on strengthening undergraduate education.

GENERAL KNOWLEDGE AND ABILITIES

General education curricula involve the basic study of liberal arts and sciences. The goal of general education is to foster the integration and synthesis of knowledge and the development of intellectual skills. These cognitive skills and habits of inquiry are associated with critical thinking, effective communication, and problem-solving. About one-third of a student's baccalaureate program is devoted to general education courses.

Abilities that last a lifetime

Critical thinking, communication, and problem-solving abilities endure job and career changes throughout one's working life. These abilities are vital for adult roles in a complex society.

Educating critical thinkers

Several campuses have been addressing academic concerns related to critical thinking, such as: What are the skills and dispositions that characterize critical thinking? What are effective ways to teach critical thinking? How can these skills be measured?

- Faculty at both Southern Oregon State College and Oregon Institute of Technology regularly meet to discuss how to introduce critical thinking into their courses.
- Portland State University recently designed freshman courses (Freshman Inquiry) to improve critical thinking, communication, and other academic skills. These new courses are based on the examination of learning outcomes research and course-taking patterns of their students.
- Critical thinking is a required component of all of Oregon State University's general education courses.

Determining general education outcomes

Because of the existing curricular emphasis on the development of critical thinking, several campuses examined ways to judge whether students are proficient in broad intellectual and analytical skills. Coordinators of assessment worked with faculty to develop an understanding about critical thinking and its assessment, select appropriate assessment tools, and determine conditions for assessment. The campuses pursued several different assessment strategies.

Southern Oregon State College used the Educational Testing Service (ETS) Tasks in Critical Thinking Test with a sample of freshmen and seniors.

Oregon State University asked faculty teaching Baccalaureate Core courses, undergraduate students, and alumni who graduated within the last three years to rate the importance of critical thinking and whether OSU courses provide students with adequate training in critical thinking skills.

Portland State University selected ACT's College Outcomes Measurement Program (COMP) to assess skills needed for lifelong learning and success in employment. Work samples are also used to assess growth in knowledge and skills.

Eastern Oregon State College evaluated the use of an existing Writing Proficiency Examination (developed by Eastern's faculty) to assess student abilities in general communicative writing, advanced literacy, and critical thinking.

Western Oregon State College uses student portfolios of writing samples to determine student abilities for fluent self-expression in English. Mathematics ability is assessed to determine student ability to use algebraic concepts in critical analysis and "real world" problem-solving.

What did these assessments reveal about OSSHE students?

Southern Oregon State College

- About two-thirds of seniors who sat for the exam are fully proficient in critical thinking (CT) tasks of inquiry, analysis, and communication.
- When compared with the freshman sample, a greater proportion of seniors have attained superior performance in CT tasks. The largest difference in proficiency is seen in communication tasks.
- A greater proportion of SOSC's freshmen have "limited" or "no proficiency" in critical thinking tasks.

Oregon State University

- All 25 components of critical thinking were highly rated. Faculty emphasized a "reasoned discourse" model of critical thinking. Students and alumni viewed critical thinking as a set of attitudinal and social abilities which allow people to consider the views of others, to communicate their own views, and to negotiate differences in a non-confrontational manner.
- Critical thinking skills were rated highly because they are viewed as basic to functioning in a diverse society which requires important decisions from its citizens.
- Faculty, students, and alumni agree that OSU students receive adequate training in critical thinking skills.

Eastern Oregon State College

- Two-thirds of Eastern's students pass the Writing Proficiency Examination (WPE) on the first attempt.
- The Critical Thinking Analytic Traits Assessment (CTAT) establishes a strong correlation between passing the WPE and applied critical thinking skills.
- Eastern's CTAT Rubrics effectively adapt the Oregon State Department of Education's Dimensions of Reading Rubric to Eastern's Writing Across the Curriculum Program, thereby providing a potentially powerful link between the state's school reform objectives and Eastern's curriculum.

Western Oregon State College

- Three-fourths of Western's students demonstrate college-level writing proficiency; two-thirds demonstrate proficiency in mathematics.

What Oregon employers say about critical thinking

OSSHE is surveying Oregon employers to determine the critical thinking skills most important in the workplace and whether graduates of Oregon's colleges and universities achieved these skills. These data will be available later this year.

These efforts are important to developing baseline data about Objective 5 of the National Education Goals: "The proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially."

More than half of the campuses used performance-based examinations (some used commercially-available standardized tests and others used faculty-developed tests) to measure critical thinking and communication skills of undergraduates.

LEARNING ENVIRONMENT

One approach to assessment of collegiate skills has centered on the development of performance-based examinations. However, given the high costs and long timelines for test development, the National Education Goals Panel recommends supplementing more direct cognitive assessments with indirect indicators of instructional practices that are associated with increased student learning effects.

There are three broad categories of "good practice" indicators:

- Institutional requirements that identify proficiencies or require specific experiences (such as a major research paper, math course, or foreign language course).

- Instructional "good practices" used in undergraduate teaching (such as active learning, frequent feedback on performance, appropriate class sizes, peer interaction, writing requirements, out-of-class work requirements, and final examinations with essay or problem-solving components).

- Student behaviors and self-reported gains in communication, critical thinking, or problem-solving skills.

Research into collegiate teaching effectiveness has revealed, for example, that writing skills of undergraduates improve when students have opportunities to write. Likewise, participation in classroom discussions is linked to gains in critical thinking abilities.

Indirect indicators of gain in higher order intellectual skills are found in student answers to questions, such as: Are writing assignments required in this class? Do students get timely feedback about their work? Do students participate in classroom discussions?

A number of OSSHE campuses surveyed students and recent graduates to find out if the learning environments encountered in undergraduate classes are consistent with the literature on college teaching effectiveness.

Portland State University. PSU selected the Classroom Environment Scales *(Winston, et. al.)* to measure quality and level of interaction between teacher and student, and among students, in the classroom, as well as opportunities for collaborative learning experiences.

PSU students find their Freshman Inquiry classes supportive and engaging.

- 92 percent of entering freshmen report they are in classes that are intellectually exciting.

- 90 percent of entering students intend to obtain a degree and prepare for a career.

- 77 percent believe professors are willing to help outside of class.

- 88 percent work together with other students on assignments and projects for the class.

- 76 percent perceive that faculty encourage students to think for themselves.

University of Oregon. UO conducted a telephone survey of students to obtain self-reports about learning experiences and outcomes.

UO students are actively engaged in learning.

- 85 percent have seen an academic advisor.
- 91 percent indicated they have discussed a course outside of class.
- 83 percent have spoken with a faculty member outside of class.
- 88 percent would recommend UO to a friend.

Percentage of undergraduates who think UO has improved their abilities in:

Writing	77%
Gathering information	91%
Analyzing data	91%
Critical thinking	93%
Factual knowledge	96%
Understanding cultural differences	80%
Working independently	84%
Appreciating art	77%

OSSHE colleges and universities have made programmatic efforts in the last few years to assist entering students with their integration into the collegiate experience. The first year in college represents a very critical time of transition, especially the first quarter.

In addition to the first term as an important transition, the teaching and learning environment in all of the classrooms and on the campus make a difference. The qualities of the environment that make a difference include: student-faculty contact, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and ways of learning. These principles of good teaching and learning serve as a focus for strengthening undergraduate education.

OSSHE students describe learning environments associated with increased learning outcomes. These include student experiences, faculty behaviors, and opportunities to extend learning beyond the classroom walls. Self-reported gains in knowledge and abilities acquired in college are high.

MAJOR FIELD KNOWLEDGE

In addition to the generalized learnings associated with a baccalaureate, students select a major field in which to specialize. The selection of a major academic field is an important decision in the life of a student because the selection has an impact on career choice and development, future earning potential, and on an individual's aesthetic, cultural, and intellectual attitudes.

The more a student studies in a particular area of knowledge (for example, majoring in physical science, humanities, or engineering), the more he/she is expected to know related to the field. OSSHE institutions assess major field knowledge and skills of seniors. Some use commercially-available major field tests, a few use portfolios of work samples, and others use senior projects or experiences for this purpose.

What are the results of these major field assessments?

Southern Oregon State College uses two approaches to major field assessment -- major field tests and capstone experiences.

The major field tests developed by the Educational Testing Service (ETS) measure "the basic knowledge and understanding gained in the undergraduate curriculum ... the mastery of concepts, principles, and knowledge expected of students at the conclusion of a major in specific subject areas." SOSC used nationally-normed major field tests to assess student proficiency in biology, economics, and sociology.

- Biology students ranked in the 79th percentile.
- Sociology majors scored at the 82nd percentile. Even higher scores were achieved by students who took seven or more sociology courses.
- Economics majors who took the test scored at the 51st percentile.

Senior capstone projects were adopted at SOSC several years ago. These projects are intended to provide students with an integrative and in-depth experience in their field.

- A sampling of capstone projects from the departments of Communication and Business was reviewed by employers of the larger Southern Oregon community to determine whether or not they met established goals. All reviewers concluded capstones met these goals and clearly reflected coursework and skills developed in the discipline.

Oregon State University compared the use of two approaches for assessing knowledge of sociology majors -- students took an objective test and developed portfolios of their work. Each portfolio was assessed by the instructor, the student, peers, and two teaching assistants at two points in the term.

- The range of capabilities captured in the portfolio was greater than that suggested by objective test results.
- An analysis of the standardized assessment scores revealed that students are competent judges of their own performances.
- The single most accurate predictor of a student's overall course performance was his or her final self-assessment.

Oregon Institute of Technology requires senior students to complete projects demonstrating the application of knowledge to real problems.

Under faculty supervision, students working alone or in teams review a broad variety of possible projects, research the topic, and determine the resources necessary to bring it to completion.

During the process, students utilize the technical knowledge and skills gained during their education, as well as skills in technical writing, speaking, and other allied topics. About 200 senior projects are completed each year.

- *Traffic engineering technology.* Student groups perform field traffic studies in Klamath Falls and surrounding areas. These include intersection turning movements and accident studies; intersection delay studies; traffic speed studies; a long-term traffic count using portable computers; a route congestion study; and a parking study. At the end of the term, these reports are given to the city and county for their use.

- *The low temperature heat engine.* This project involves the development of an engine that is powered from 110-degree F. hot water, an idea patented by a Seattle inventor. The students have designed the system and are building the prototype. The engine is a technological breakthrough using low temperature water heated by solar, geothermal, and waste heat sources to produce power that can be used to generate electricity or drive machinery.

- *The ground source heat pump.* This project absorbs and rejects heat from the ground to heat and cool a residence. The technology has the potential of increasing from 20,000 installed units per year presently to 400,000 units per year by the year 2000, according to the Department of Energy.

What is the value of major field assessment?

Major field assessments are important tools for individual student advisement and program development. Lower performance in a component of the major for an individual may suggest the need for additional coursework to raise proficiency. Lower performance for a subgroup of students may suggest the need for a department to examine courses, program requirements, or instruction methods.

OSSHE students are working in-depth in their fields, integrating knowledge of their discipline, applying knowledge to real-world contexts, evaluating their progress using portfolios, and performing well on standardized objective tests compared to national norms.

DEGREE COMPLETION:
A LONGITUDINAL VIEW OF FIRST-TIME FRESHMEN

More than half of the 1987-88 cohort of first-time freshmen graduated within seven years, either from the institution in which they first enrolled (44.4 percent) or from another Oregon State System institution to which they transferred (6.7 percent). Some who left will have completed a two- or four-year degree elsewhere, but there is no systematic way to track students once they leave the State System.

Entering student characteristics

Of the 8,142 full-time freshmen who entered an OSSHE institution in Fall 1987:

- More than 80 percent were Oregon residents;
- Nearly 10 percent were from a racial/ethnic minority group; and
- Proportion of males and females was almost even.

The timely and successful completion by students of their educational programs provides some evidence of quality.

Of those first-time freshmen who entered in Fall 1987:

- 4,163 earned a four-year degree from an OSSHE institution.

These data are comparable to national data for first-year attrition and degree completion for first-year freshmen.[1] In addition to first-time freshmen, an estimated 6,000 students transferred to an OSSHE institution either from an Oregon community college or from a four-year college.

Are some groups of students more successful than others?

Attrition. Just over 26 percent of freshmen left the State System after the first year.

- There is greater first-year attrition among men (28.1 percent) compared to women (24.5 percent).
- Among racial/ethnic groups, first-year attrition is lowest among Asian-American students (16.5 percent) and highest for American Indians (42.7 percent).
- For residents and nonresidents, first-year attrition is about the same.

Completion. Baccalaureate completion rates vary for different groups of students.

Residency status. Residents are about as likely as nonresidents to graduate (51.5 percent versus 49.5 percent).

Gender. On average, females are more likely to earn a degree than males (53.5 percent versus 48.7 percent).

Entering age. Students who delay entry to college are less likely to obtain their undergraduate degrees than are students who begin immediately after high school.

- Fewer than 1 out of 3 students who began college in their 20s completed a degree at an OSSHE institution.

Race/Ethnicity. Among first-time freshmen of different race/ethnicity:

- Asian-American students (58 percent) are more likely to earn degrees than other racial/ethnic groups.

- White/European American students (51.8 percent) are more likely than either Hispanic (48.1 percent), African-American (30.2 percent), or American Indian (24.7 percent) students to earn a degree.

Entrance Standards. Degree completion is strongly associated with individual ability. First-time freshmen of higher ability, as demonstrated by high school GPA, are more likely to earn a four-year degree from an OSSHE institution.

- On average, almost 70 percent of first-time freshmen with high school GPAs of 3.25 or greater complete degrees.

- The likelihood of earning a four-year college degree is more strongly associated with higher ability than racial/ethnic status. For students with high school GPAs of 3.25 or above, the percentage who completed degrees are:

African-American	61.5%
American Indian	41.0%
Asian-American	74.5%
Hispanic/Latino	67.5%
White Euro. American	67.7%

- Thirty-seven percent of first-time freshmen have a high school GPA of 3.25 or above:

African-American	10%
American Indian	19%
Asian-American	44%
Hispanic/Latino	31%
White Euro. American	41%
Total	39%

First-time freshmen with high school GPAs below 2.5 have a much reduced chance of earning a degree (1 in 4). However, less than 10 percent of entering freshmen admitted have high school GPAs that low.

How is assessment related to student retention and degree completion?

Several campuses are collecting a range of student-related data -- their intentions, attributes, perceptions, character of student experiences, competing obligations of students, and the like. These assessments are critical to developing a supportive learning environment in which students persist, make changes, grow intellectually, and earn degrees. Assessments of student goals, reasons for selecting a college, and support of family and peers are indicators of student commitment. Likewise, student self-assessments of knowledge, abilities and skills acquired are important for determining if students are making the connections needed to be successful. These retention data provide a baseline against which to measure the effects of OSSHE's efforts in the near future.

One out of two first-time freshmen admitted in 1987-88 to a State System institution earned a degree from either the institution in which they first enrolled or an institution in the State System. High school GPA -- a combination of natural abilities, hard work and effort, and good study habits -- is the best predictor of college success.

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[1] From Astin, Alexander W., "How Good is Your Institution's Retention Rate?" Unpublished paper, University of California, Los Angeles, 1993; and Porter, Oscar F., *Undergraduate Completion and Persistence at Four-Year Colleges and Universities*. National Institute of Independent Colleges and Universities, 1989

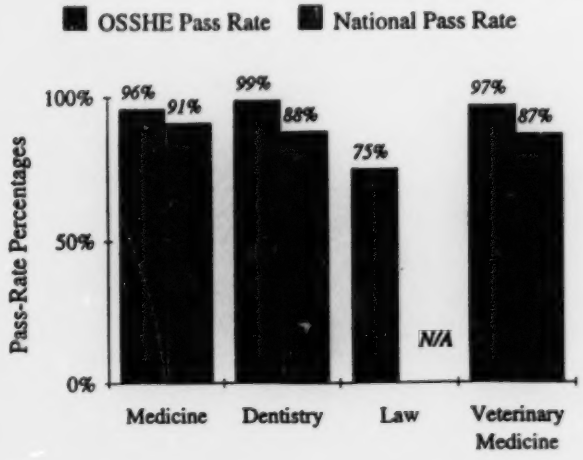
PROFESSIONAL LICENSURE IN SELECTED PROGRAMS

High quality professional education is essential to providing access to professional services for Oregonians. A large proportion of licensed professionals in their fields in Oregon attended an OSSHE institution.

OSSHE offers entry professional programs in law, medicine, dentistry, and veterinary medicine.

- 1,135 students were enrolled in entry professional programs in Fall 1994.
- 300 professional degrees were awarded in 1993-94 (116 in Law, 87 in Medicine, 69 in Dentistry, and 28 in Veterinary Medicine).

In addition to meeting degree requirements, professional licensure or certification is required by state law for these professions as well as other fields.



OSSHE students who take these examinations tend to have pass-rates substantially higher than the national averages.

Other fields require licensure examinations for graduates to practice in Oregon.

	OSSHE Pass Rate	National Pass Rate
Architecture	85%	56%
Engineering *	90%	65%
Accounting **	33%	18%
Pharmacy	95%	84%

* OSU, PSU (1993)
** PSU, UO, OSU, EOSC, SOSC

Students preparing for other occupations requiring licensure perform impressively on their exams as revealed in pass-rates. These include:

Nuclear Medicine Technology	100%
Medical Technology	90%
Nursing	90%
Dental Hygiene	100%
Radiation Therapy	100%
Dietetic Internship	100%
Clinical Social Worker	99%
Registered Dietician	94%

The average income for Oregonians holding a professional degree is $67,600 (1992 survey by Employment Department). Households headed by professionals contribute a growing share of federal and state tax resources.

Overall, OSSHE universities produce highly qualified professionals as evidenced by their exceptional performance on national and state licensure examinations.

NOTE: Educational professionals are required to take the National Test for Educators (NTE) beginning in 1994. Limited data are available this year.

EMPLOYMENT

OSSHE contributes to Oregon's pool of highly educated workforce needed for its future economic productivity.

- Knowledge and abilities associated with a college education are valued in the workplace.
- 39 percent of Oregon's adults who hold baccalaureates graduated from an OSSHE institution (U.S. Census).

Employment experiences of OSSHE graduates

The effectiveness of OSSHE's programs in preparing students is found in the employment experiences of students following graduation. OIT, OSU, and PSU surveyed recent graduates about employment experiences.

Oregon Institute of Technology

- 94 percent of OIT's graduates in 1993-94 were either employed, continuing their education, or not seeking employment.
- More than half found jobs in service industries (e.g., health care and engineering).
- The average salary for 1993-94 OIT baccalaureate graduates was $30,312. The highest salary for a "fresh grad" was $52,000.
- 75 percent of OIT graduates are employed in Oregon with 38 percent in the Portland area and 28 percent in Klamath Falls.
- Since 1991, there has been a 21 percent increase of graduates finding work in Oregon.

Oregon State University

- 92 percent of OSU's 1994-95 graduates are either employed, enrolled in graduate school, or not seeking employment.
- 7 out of 10 are employed in a job related to their major.
- 77 percent of OSU graduates are employed in Oregon, including one-third of graduates who were admitted as nonresident students.
- Average salary of recent graduates employed full-time is $23,424. There are significant salary differences among majors.

Portland State University

- 98 percent are employed or enrolled in graduate school.
- 64 percent are in jobs related to their majors.
- 80 percent are employed in Oregon.
- Almost two-thirds reported incomes in excess of $21,000.

Employers rate skills and abilities of graduates

OIT is working with American College Testing (ACT) to survey more than 400 employers who have hired OIT graduates. The instrument will measure employer satisfaction with the work habits, basic skills, technical/theoretical knowledge, and personal qualities of OIT graduates. The survey will also gather information on emerging employer needs and recommenda-tions for improvement of the OIT curriculum. The survey will first be conducted in 1995.

Continuing education as indicator of graduate quality

Following graduation, about 12 percent of recent graduates from OIT, OSU, and PSU are continuing their education; most are enrolled in graduate school.

OSSHE provides opportunities for Oregon's sons and daughters to be full participants in the new economy. Of the 2,500 baccalaureate graduates surveyed, 95 percent were employed or enrolled in graduate school. Of those employed, 80 percent found jobs in Oregon.

CUSTOMER SATISFACTION: ALUMNI

The instruction component of public higher education has two broad categories of customers. First, those who directly consume higher education services -- the students who attend and graduate (alumni) from the colleges and universities. Second, those who indirectly use higher education services through the employment of graduates. In order to serve our customers better, several institutions examined approaches to determine student, graduate, and/or employer satisfaction with the quality of education and services received on their campuses.

What kind of job are we doing?

Telephone interviews and mail surveys of alumni and recent graduates were professionally designed and conducted.

Seven campuses surveyed more than 3,500 recent graduates or alumni. They found very high levels of satisfaction with the contribution their institution made to students' preparation for a fulfilling life. Almost all respondents believe college made a difference in their later success.

More than 1,000 recent OSU graduates were surveyed. OSU students were satisfied with various aspects of the university and their programs of study.

- 9 out of 10 OSU graduates are satisfied with the quality of teaching and course content.
- More than 8 out of 10 OSU graduates are satisfied with computing, laboratory, classroom, and library facilities.
- More than 7 out of 10 OSU graduates are satisfied with course availability and size of classes.
- Communications skills courses in the OSU Baccalaureate Core are highly valued by these graduates.
- The highest rated services provided by student support programs and offices are study abroad, student activity center, cultural centers, and continuing higher education.
- More than 4 out of 5 OSU students who used child care services, recreational facilities, student health services, and on-campus housing are satisfied.
- When asked about the effects of OSU's research mission on the quality of undergraduate instruction, recent graduates viewed the research mission as having improved the quality of their undergraduate education.

Portland State University surveyed more than 1,000 students who graduated one year ago.

- 78 percent were satisfied with service from faculty and staff.
- 86 percent were satisfied with the quality of instruction.
- 85 percent felt PSU prepared them for graduate school.
- 89 percent were satisfied with their experience at PSU.
- 54 percent gained practical employment experience while at PSU.

More than 1,000 University of Oregon alumni were interviewed by telephone. The sample included alumni who graduated from the UO between 1920 and 1994.

- 8 out of 10 alumni said UO did a good job teaching undergraduates.
- 8 out of 10 indicated faculty did a good job bringing their research into class.
- 86 percent said they would select UO again.
- 9 out of 10 indicated UO is important to attracting new business to Oregon.
- The most frequently identified strength was "quality of UO's education."
- The most frequently identified weakness at UO was "state funding."

More than 500 Western Oregon State College alumni were interviewed by telephone.

- 9 out of 10 alumni said Western did a good job teaching undergraduates.
- 93 percent said that "faculty cared."
- Almost two-thirds completed a baccalaureate in 4 years or less.
- 8 out of 10 alumni said location was important in original decision to attend.
- 89 percent indicated they would select Western again.

UO and WOSC alumni report great skill and knowledge gains in ability to:

Write	92% or more
Think Critically	96%
Know Major Theories	93% or more
Public Speaking	80% or more
Exercise Leadership	80% or more

Oregon Health Sciences University surveyed dental and nursing graduates.

Graduates of the dental school over the last six years were largely in solo practice earning a median annual income of $100,000 to $150,000.

- 90 percent of the graduates are "positive" about preparation for general dental practice.
- Two-thirds are positive about consulting with faculty about questions that arise in practice.

Of the nursing graduates in 1991 and 1993, 93 percent are currently employed, three-fourths full-time.

- 17 percent have entered or completed a graduate program.
- 7 out of 10 would recommend the program to people interested in a nursing career.
- Graduates reported that the baccalaureate program achieved its learning goals.

Oregon Institute of Technology has been working with American College Testing to survey alumni who graduated five and ten years ago to measure alumni continuing education, assessment of the value of their college experiences, and employment history. Alumni will be surveyed in 1995.

OSSHE graduates are very satisfied lifetime customers.

The relationship isn't over when the degree is awarded. Each graduate is viewed as a lifetime customer who brings family and friends to our campuses.

- Alumni attend class reunions, lectures, performing arts events, and athletic events.

- They mentor current students, network with other alumni, and recruit new students.

- More than 8 out of 10 alumni from UO and WOSC would recommend their alma mater to a high school student.

The information gleaned from customer perceptions enables campus administrators and faculty to see their work through the eyes of students, graduates, and employers and is valuable in achieving greater quality and productivity on the OSSHE campuses.

Recent graduates and alumni report they are satisfied with the contribution their institutions made to their lives.

CUSTOMER SATISFACTION: STUDENTS

Nothing is more central to the success of a business than meeting customer requirements. For higher education, students and employers are primary customers of the instructional component of higher education. A number of campuses surveyed currently enrolled students to obtain feedback about how satisfied they are with the higher education services they received ("the product") and the extent to which requirements are met.

Portland State University

Portland State surveyed two groups of students -- entering freshmen and undergraduates.

What Portland State freshmen say about their university:

- 8 out of 10 are attending PSU as their first or second choice.
- 8 out of 10 are likely to complete a bachelor's degree at PSU.
- 7 out of 10 are in classes they wanted.
- 86 percent are in intellectually exciting classes.
- 87 percent are socially comfortable coming to classes.

Reasons freshmen are attending PSU:

- 88 percent to prepare for a career.
- 81 percent to enrich life.
- 76 percent to increase income.

What PSU undergraduates say about PSU:

- 80 percent are employed outside the home.
- 89 percent work more than 16 hours per week.
- 79 percent are in classes they want to take.
- 88 percent find classes intellectually stimulating.
- 62 percent say instructors show concern for students.
- 79 percent are satisfied with their major field instruction.

University of Oregon

What UO undergraduates say about their university:

- 8 out of 10 say UO was their first or second choice.
- 9 out of 10 are satisfied with the education they are receiving.
- 9 out of 10 say UO does a good job teaching undergraduates.
- 8 out of 10 say faculty do a good job bringing research into classes.
- 7 out of 10 have met a faculty member who cares.
- 7 out of 10 think UO is academically challenging.

Reasons undergraduates are attending UO:

- *8 out of 10 say faculty quality.*
- 8 out of 10 say location.
- 7 out of 10 say prestige of degree.

OSSHE students are satisfied with the higher education services they are receiving. Measuring customer satisfaction is an important part of our assessment effort. (The results of the employer surveys will be available later this year.)

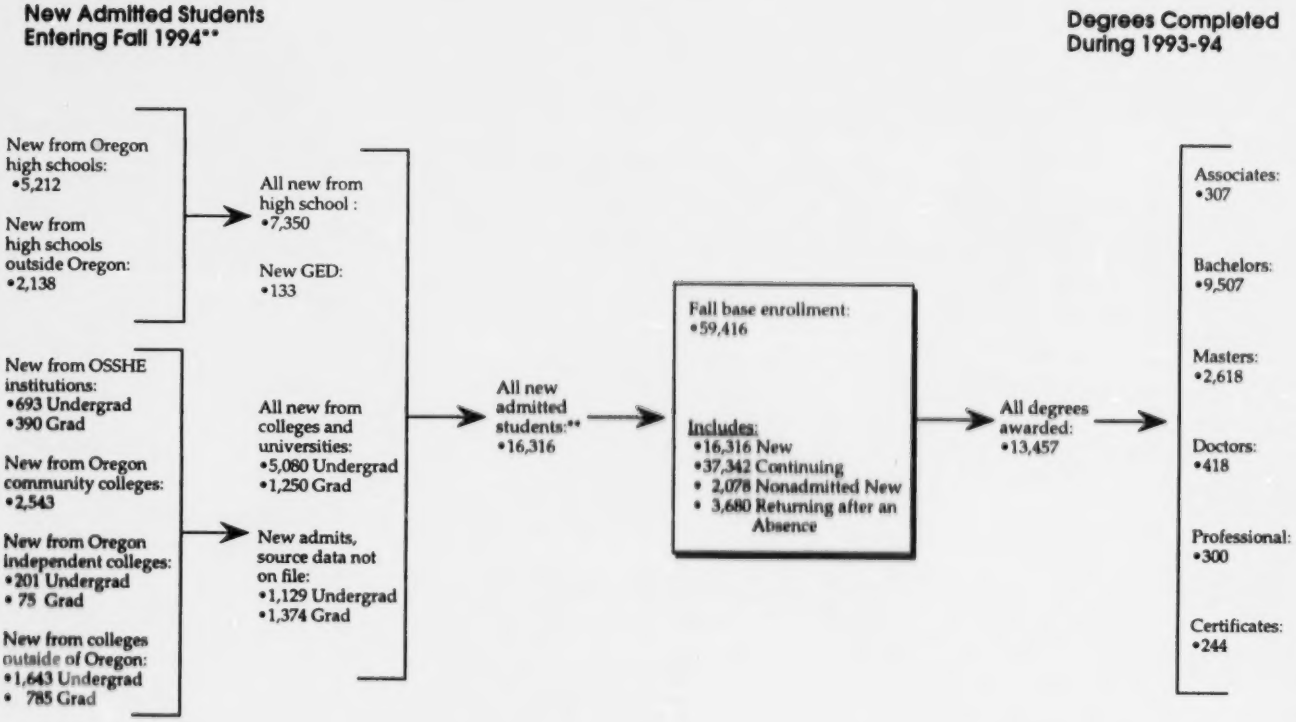
CONCLUSION

Great expectations

Those who participate and invest in higher education should expect high quality. The Oregon State System of Higher Education has adopted a number of initiatives related to increasing higher education productivity -- serving more students, improving student performance, and providing a more valued mix of services relative to costs.

Strategies for improving higher education productivity require mechanisms for gathering information from a variety of sources and on an ongoing basis. Assessment plays a key role in quality assurance. This document presented the baseline evidence collected this year to develop a quality assurance system.

Students Beginning and Completing Degrees in State System Institutions 1994*


New Admitted Students Entering Fall 1994**
Degrees Completed During 1993-94
New from Oregon high schools: •5,212
New from high schools outside Oregon: •2,138
All new from high school : •7,350
New GED: •133
New from OSSHE institutions: •693 Undergrad •390 Grad
New from Oregon community colleges: •2,543
New from Oregon independent colleges: •201 Undergrad • 75 Grad
New from colleges outside of Oregon: •1,643 Undergrad • 785 Grad
All new from colleges and universities: •5,080 Undergrad •1,250 Grad
New admits, source data not on file: •1,129 Undergrad •1,374 Grad
All new admitted students:** •16,316
Fall base enrollment: •59,416
Includes: •16,316 New •37,342 Continuing • 2,078 Nonadmitted New • 3,680 Returning after an Absence
All degrees awarded: •13,457
Associates: •307
Bachelors: •9,507
Masters: •2,618
Doctors: •418
Professional: •300
Certificates: •244

* Fall 1994 enrollment data and 1993-94 degrees data are used here to be consistent with data reported in the OSSHE Fact Book 1995.
** Excluding Oregon Health Sciences University for which data on new students are not available.

Sources: (1) OSSHE Institutional Research Services, Fall 1994 Fourth Week Enrollment reports, report ERTE-01. (2) IPEDS Completions reports, 1993-94.

How productive is OSSHE in transforming students into graduates?

OSSHE's base enrollment in 1994-95 is 59,416 students. Of these students, 16,316 students began studies at an OSSHE college or university and 13,457 completed degrees.

The newly admitted students include first-time freshmen, transfer students from Oregon's community colleges, and transfer students from public and independent four-year colleges.

This enrollment-to-degree production provides a panoramic view of the flow of students through the system and of OSSHE's performance in one year.

Degree production alone, however, does not describe the value added to students given their entering characteristics. In order to provide a closer look at what happens to students as a result of their participation in higher education, the Oregon Assessment Model was adopted as a framework to guide campus assessment efforts.

Oregon Assessment Model

OSSHE's assessment approach, the Oregon Assessment Model, was adopted in the Fall 1993 to improve student learning and to communicate more effectively with our customers and investors. In addition to assessment on a course-by-course basis, under the Oregon Assessment Model provides that undergraduates will be assessed at three critical transitions: as entering freshmen (admissions), for general knowledge and intellectual abilities (midpoint), and for major field knowledge and employment outcomes (graduation).

Campuses are beginning to examine more closely the effects of what they do on student and graduate performance.

- They are using nationally normed tests, faculty developed tests, portfolio collections of student work, and self reports to assess gains in general knowledge and abilities and specialized knowledge in their major fields.

- These campuses are using assessment to identify some common learning problems (such as reading, writing, speaking, quantitative reasoning, and critical thinking skills). The information gleaned from assessment will be used to improve the lives of students by strengthening the curriculum and targeting student advising to enhance learning effects.

- In addition to performance-based assessment, campuses collected a range of student-related data -- their intentions, attributes, perceptions, character of student experiences, and competing obligations of students. Assessment of student goals, reasons for selecting a college, and support of family and peers are indicators of student commitment and are related to persistence and degree completion.

What effect is assessment having on OSSHE campuses?

OSSHE colleges and universities are rethinking traditional ways of structuring collegiate learning environments and finding ways of actively involving students in their education to enhance student retention and learning. Assessment plays an essential role in determining the success of our efforts and demonstrating accountability to our customers and investors. OSSHE's assessment and programmatic efforts are critical to developing a supportive learning environment in which students persist, make changes, grow intellectually, earn degrees, and bring their talents into Oregon's workforce.